

REMARKS

Applicants initially acknowledge with appreciation the indication that claims 3, 4, 6, 8, 13, 14, 16 and 18 contain allowable subject matter. By this amendment, as suggested by the Examiner, claims 6, 8, 16 and 18 have been amended to list the recited groups as Markush groups. Claims 1-20 are presented for further examination.

The Office Action alleges that the information disclosure statement filed on July 3, 2006 fails to comply with 37 C.F.R. § 1.98(a)(3) because it does not include a concise explanation of relevance for the Tsukune reference. This cited section of the CFR clearly states, however, that a concise explanation may be either separate from applicant's specification or incorporated therein.

A statement of relevance for the Tsukune reference is set forth at page 3, lines 1-14 of the specification as originally filed. Thus, Applicants submit that the information disclosure statement does comply with the Rules and respectfully request that the Examiner provide an initialed PTO-1449 Form indicating that the Tsukune reference has been considered.

The objections of claims 6, 8, 16 and 18 are believed overcome by the foregoing amendments to these claims. Reconsideration and withdrawal of the objections are respectfully requested.

The rejection of claims 1, 2, 5, 7, 9, 11, 12, 15, 17 and 19 under 35 U.S.C. § 103(a) over Miyazaki, US 6,258,640, and the rejection of claims 10 and 20 under 35 U.S.C. § 103(a) over Miyazaki in view of further comments proffered by the Examiner are respectfully traversed.

Independent claims 1 and 11 relate to a substrate processing method that uses hydrogen sintering. According to claim 1, the hydrogen sintering involves a step of forming an atmosphere comprising hydrogen radicals and hydrogen ions by exciting a processing gas including a noble gas and hydrogen into a plasma, and applying the hydrogen sintering process to an electronic device substrate by

exposing the electronic device substrate to the hydrogen radicals and the hydrogen ions.

In a similar vein, claim 11 requires that a polysilicon electrode is exposed to an atmosphere containing hydrogen radicals and hydrogen ions, the hydrogen radicals and hydrogen ions being formed by exciting a gas containing a noble gas and a hydrogen gas by plasma.

Pointedly, each independent claim requires the formation of hydrogen radicals and hydrogen ions by exciting a gas containing a noble gas and a hydrogen gas using plasma. The claimed plasma-based hydrogen sintering process is not reasonably taught or suggested by the cited reference.

To establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. Miyazaki does not disclose or suggest a plasma hydrogen sintering process, much less a plasma hydrogen sintering process based on a gas containing both a noble gas and a hydrogen gas. In addition to being completely silent as to a noble gas, Miyazaki is completely silent as to a plasma process.

In contrast to the assertion made in the Office Action, Miyazaki merely teaches that a low temperature heat treatment is conducted for a sintering process under hydrogen atmosphere (see, e.g., column 6, lines 26-36). Further, in the (non-plasma) hydrogen sintering process taught by Miyazaki, hydrogen is the only gas included in the processing atmosphere.

There is no motivation to modify the low temperature heat treatment taught by Miyazaki into the claimed plasma-based process. The thermal process taught by Miyazaki is completely distinct from the claimed plasma process. Because Miyazaki does not disclose a plasma-based hydrogen sintering process, much less a hydrogen sintering process that includes a noble gas in addition to a hydrogen gas, the claimed process cannot be obvious in view of Miyazaki.

The Office Action alleges that it would have been obvious to add a noble gas to the hydrogen gas taught by Miyazaki in order to control the plasma atmosphere. Because Miyazaki does not teach any plasma process whatsoever,

much less a plasma process used for hydrogen sintering, the basis for this rationale is unfounded. Reconsideration and withdrawal of the rejection are respectfully requested.


In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned at (202) 624-2995 would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #010986.55104US).

Respectfully submitted,

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